

**PROPOSED IMPROVEMENTS
PARKING LOT LIGHTING
ALAMO HEIGHTS SWIMMING POOL**

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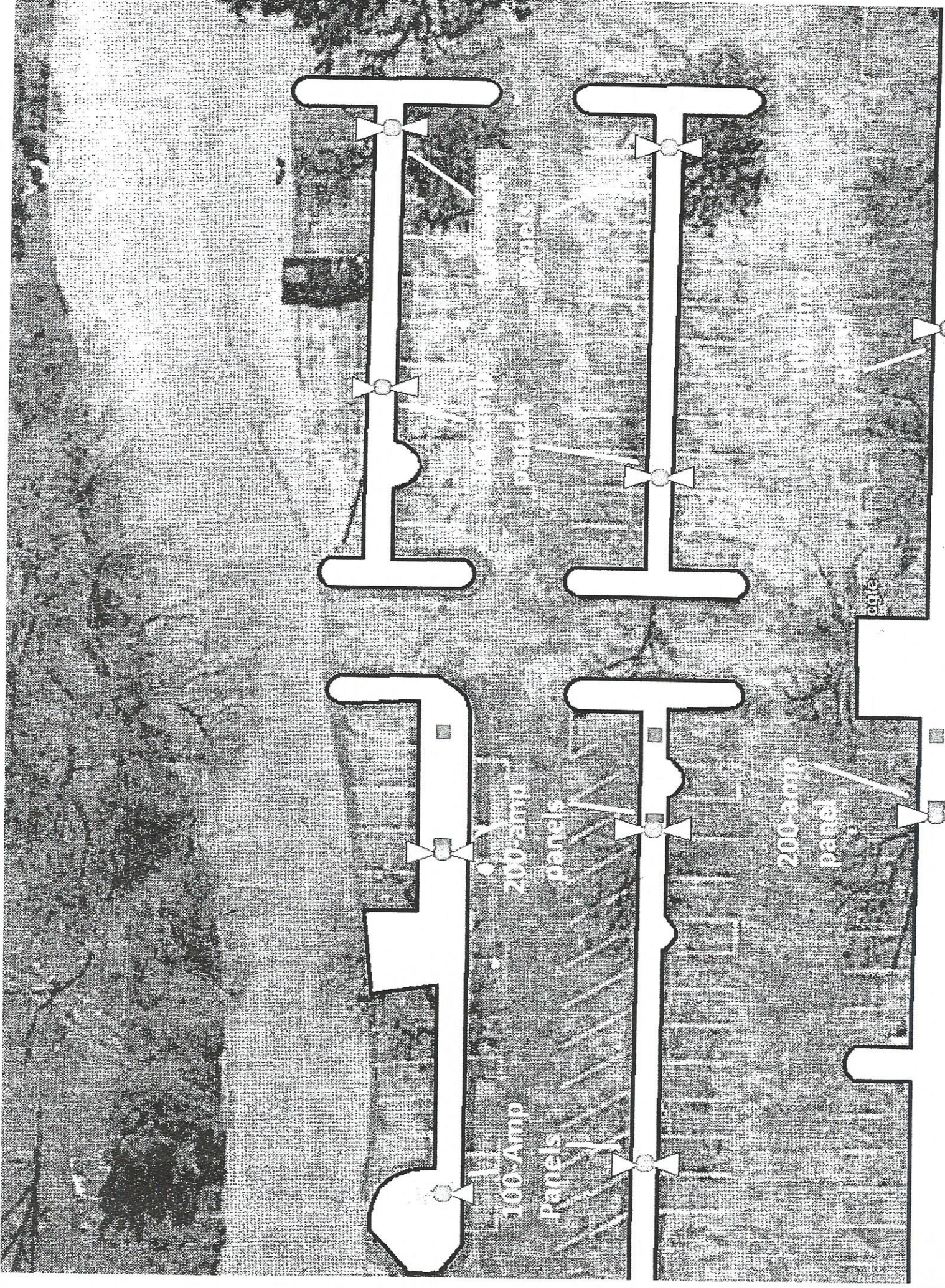
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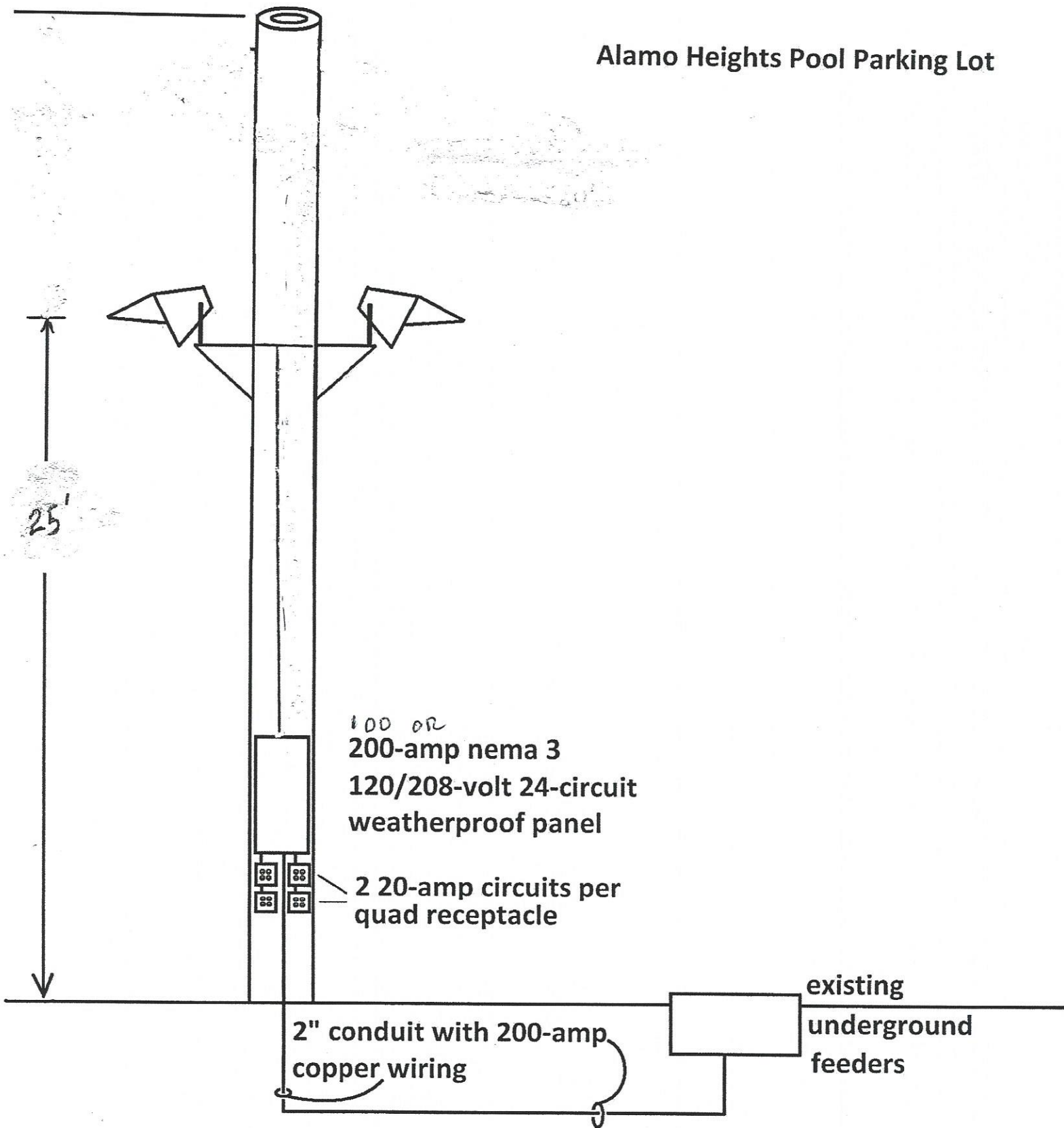
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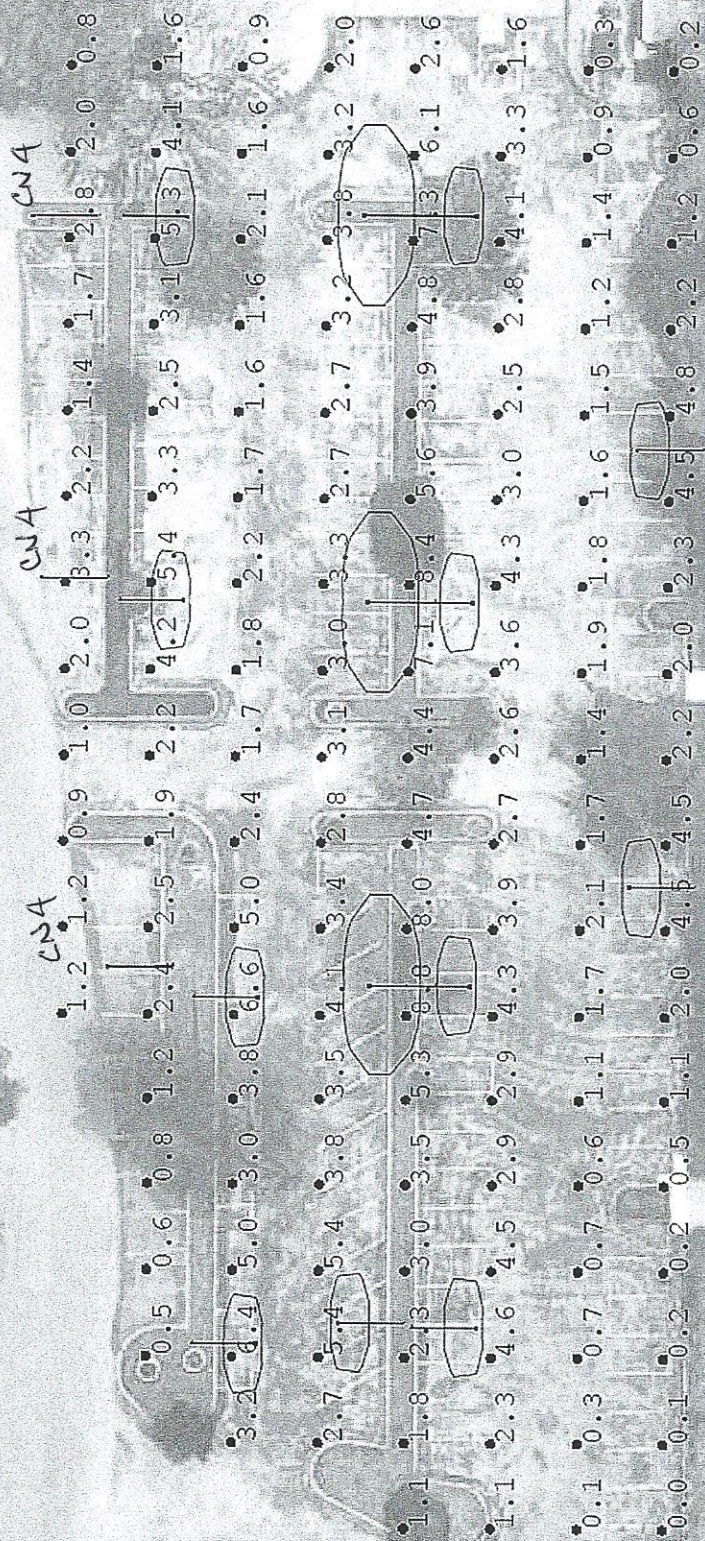




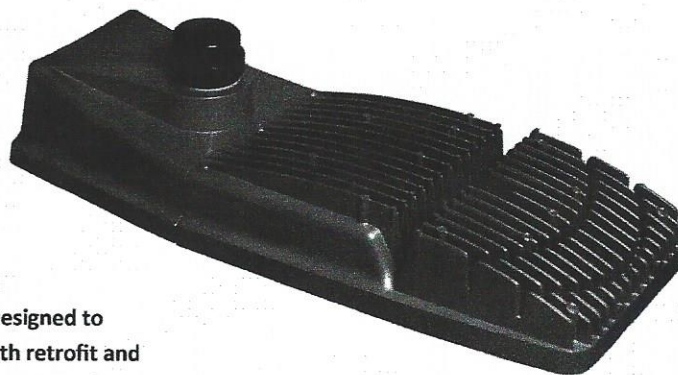


Alamo Heights Pool Parking Lot





AV Series of DOT & Area LED Luminaires



Applications:

The AV LED Luminaire is Greenstar's second generation utility grade Luminaire. Designed to perform in both demanding Roadway and Area Lighting projects. It is ideal for both retrofit and new construction and has a sleek, modern, architecturally pleasing design. An area arm is available for parking lots, auto dealerships, and other area lighting designs where aesthetics are important. This innovative design produces light output equivalent to a 250W traditional systems and provides energy savings of 65% or greater.

Features:

Construction—The AV series is designed with rugged, corrosion-resistant, die cast aluminum housing with stainless steel hardware for durability and strength. An epoxy powder-coated finish provides excellent resistance to outdoor conditions.

LED's—The AV incorporates advanced high-efficiency Philips Lumiled Luxeon M 4100K (70CRI) or 5700K (75CRI) components providing optimized combinations of light delivery to uniformly illuminate target areas.

Electrical—The Luminaire is available in 100-277V or 347-480V at 50/60Hz. Power Factor of >95%. Total Harmonic Distortion (THD) is <10%. Exceeding Energy Star requirements, the AV conforms to industry, DOT, and government performance mandates and standards. Efficacy of 90+ lumens per watt enables the AV to properly manage heat dissipation while enhancing performance and longevity.

Optics—Precision-molded, optical grade lenses available in Type II, III, IV, and V distribution patterns. Cutting edge photometric design achieves full cutoff with zero light above the horizontal plane/axis.

LED Rated Life (L75) - These high quality LED's are rated for approx. 100,000 hours @ 25°C (77°F) ambient environment per LM-80, TM21.

Protection/Ingress—LED and driver compartments are IP66 rated. Surge compartment is IP54 rated.

Photocontrol Options—3 pin NEMA receptacle is standard and replaceable. NEMA receptacles also available in 5 and 7 pin configurations.

Surge Protection—10kV/10kA (ANSI/IEEE C64.41.2) is standard and replaceable.

Listings—ETL, UL, CSA, LM79, LM80, NEMA, IESNA, ASTM B117, Dark Sky compliant, ARRA and NAFTA compliant. DLC and NOM design conformance.

Designed to Meet TX DOT and Most All Other DOT Specifications!

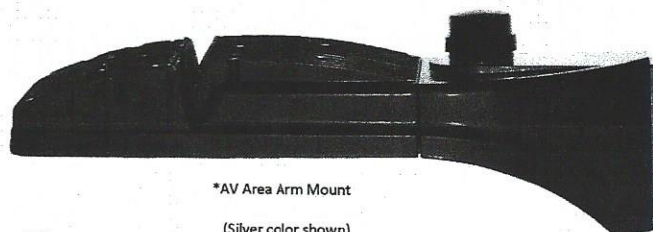
Ordering Table:

Example: AAV8421SNXX

Model	LED Quantity	CCT	Distribution	Voltage	Color	Photocell	Dimming	Option 1
AV = Roadway Arm 277V	8	4 = 4100K	2 = Type II	1 = multi volt	S = Silver	C = None/cap	X = None	X = None
AAV = Area Arm 277V	12	6 = 6000K	3 = Type III	90-285 VAC	R = Bronze	N = NEMA Receptacle	D = Dimming	H = House
AVH = Roadway Arm 480V			4 = Type IV	50-60 Hz		R = NEMA Photocell	(0-10vdc)	Side Shield
AAVH = Area Arm 480V			5 = Type V	4 = 347V-480V 50-60Hz		7 = 7 pin NEMA		

Accessories:

- NEMA 5 pin and 7 pin receptacles.
- Knuckle Mount, can be used to achieve a higher angle.
- Area Arm Mount fits a 4" square or round pole seamlessly.



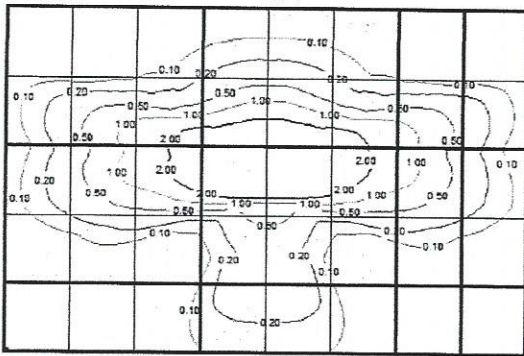
*AV Area Arm Mount

(Silver color shown)

* Silver is standard for Roadway configuration; Dark Bronze is standard for Area configuration.

Photometrics:

AV12, 5700K, Distribution Type II

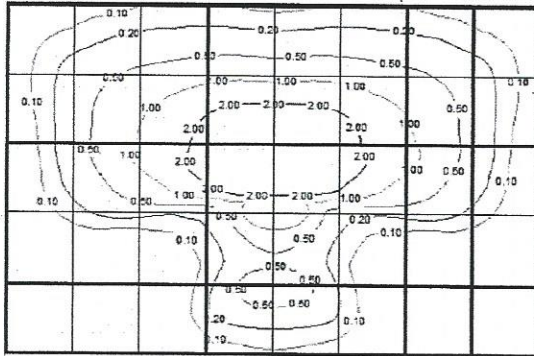


Sample area of 200 by 125 ft at 25 ft height.

	LCS Zone	Lumens	% of Luminaire
Forward Low (FL)	0-30°	2,503.3	16.7%
Forward Medium (FM)	30-60°	6,146	41.0%
Forward High (FH)	60-80°	2,698.2	18.0%
Forward Very High (FVH)	80-90°	60	0.4%
Back Low (BL)	0-30°	750	5.0%
Back Medium (BM)	30-60°	1,304.1	8.7%
Back High (BH)	60-80°	1,424.1	9.5%
Back Very High (BVH)	80-90°	105	0.7%
Uplight Low (UL)	90-100°	0.0	0.0%
Uplight High (UH)	100-180°	0.0	0.0%
Total		14,990	100%

BUG Rating: B2-U0-G2

AV12, 5700K, Distribution Type III

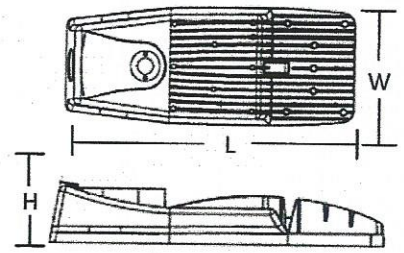


Sample area of 200 by 125 ft at 25 ft height.

	LCS Zone	Lumens	% of Luminaire
Forward Low (FL)	0-30°	1,888.7	12.6%
Forward Medium (FM)	30-60°	6,026	40.2%
Forward High (FH)	60-80°	3,867.4	25.8%
Forward Very High (FVH)	80-90°	45	0.3%
Back Low (BL)	0-30°	734.5	4.9%
Back Medium (BM)	30-60°	1,409.1	9.4%
Back High (BH)	60-80°	944.4	6.3%
Back Very High (BVH)	80-90°	75	0.5%
Uplight Low (UL)	90-100°	0.0	0.0%
Uplight High (UH)	100-180°	0.0	0.0%
Total		14,990	100%

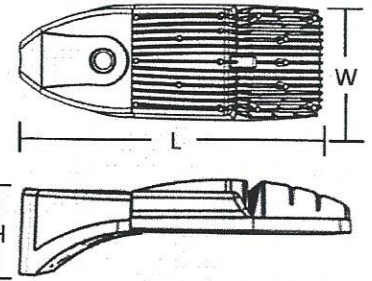
BUG Rating: B2-U0-G2

Weights/Dimensions:



AV Roadway

EPA: 1.1 sq. ft.
Length: 25 in. (63.5 cm)
Width: 10 in. (25.4 cm)
Height: 6.4 in. (16.25 cm)
Weight: 20 lbs.



AV Area

EPA: 1.0
Length: 21.2 in. (54 cm)
Width: 9.8 in. (25 cm)
Height: 7.9 in. (20 cm)
Weight: 22 lbs.

Performance Summary:

Model	Input Watts	Input Current (A)			Distribution Type	4100K		5700K	
		120V	240V	277V		Lumens	Efficacy (LPW)	Lumens	Efficacy (LPW)
AV8	75	0.63	0.31	0.27	II	9,400	94	9,700	97
					III				
					IV				
					V				
AV12	157	1.30	0.65	0.57	II	14,620	93	15,250	97
					III				
					IV				
					V				

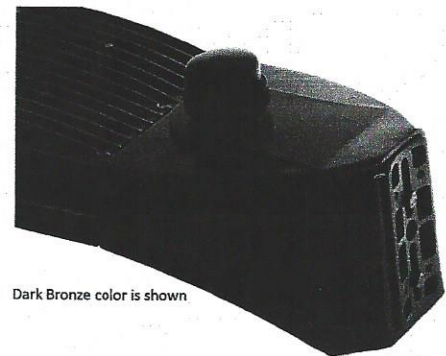
Mounting:

A slip fitter mount accepting horizontal arms up to 2.5" OD. Bubble level available inside mounting compartment for simple leveling at time of installation. Area mount easily fits a 4" square or round pole seamlessly with the universal adapter.

Warranty:

5 year limited warranty with a 10 year option when required.

*** All Specifications Are Subject To Change Without Notice ***



Dark Bronze color is shown

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UL
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LED
lighting facts
A Program of the U.S. DOE



ISO9001:2008

CN Series of Municipal Roadway LED Luminaires

Applications:

Greenstar's newest generation of Residential LED Street and Area Lighting, the CN, offers a sleek modern design weighing less than 7 pounds for models CN2 & CN3 and less than 10 pounds for models CN4 & CN6. It is ideal for 2 and 3 lane local and collector Roadways, achieving IESNA RP8 standards up to 170' pole intervals. The performance is equivalent to 70W through 250W High Pressure Sodium (HPS) Luminaires and provides energy savings of 65% or greater. The CN is designed to meet the needs of Municipalities, DOT's, Utilities, Electric Cooperatives, Parks, Paths, and other Roadway and Area applications.

Features:

Construction—Heavy-duty, corrosion-resistant, low copper, die cast aluminum housing with stainless steel hardware for strength and durability. A powder-coated finish provides excellent resistance to extreme environments.

LED's—The CN incorporates high quality, high-efficiency 4100K (70 CRI) or 5700K (75 CRI) LUXEON M LEDs.

Electrical—The Luminaires are available in 100-277V and 347-480V, 50/60Hz. Power Factor of >95%. Total Harmonic Distortion <10%. Exceeding Energy Star requirements, the CN conforms to industry and government performance mandates and standards. Efficacy of 90+ lumens per watt enables the CN to properly manage heat dissipation while enhancing performance and longevity.

Optics—Precision-molded, optical grade lenses covered by a high-impact glass cover (IK08 strength rating). Type II, Type III, and Type V distributions available. Cutting edge photometric design provides zero light above the horizontal plane/axis delivering optimized uniformity to the illuminated areas.

LED Rated Life (L75) - These high quality LED's are rated for approx. 100,000 hours @25°C (77°F) ambient environment per LM-80, TM21.

Protection/Ingress—LED and driver compartments are IP66 certified. Surge compartment is IP54 certified.

Photocontrol Options—3 pin NEMA receptacle standard and replaceable. 5 and 7 pin receptacle options available.

Surge Protection—10kV/10kA (ANSI/IEEE C64.41.2) is standard and replaceable.

Listings—ETL, UL, RoHS, CSA, IP66, LM-79, LM80, NEMA, IESNA, ASTM B117, Dark Sky, ARRA, and NAFTA compliant. DLC, NOM—pending.

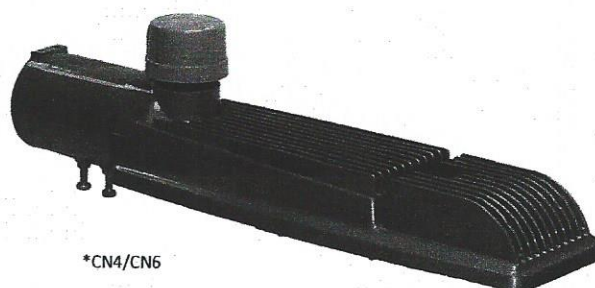
Ordering Table:

Example: CN2421SNDXX

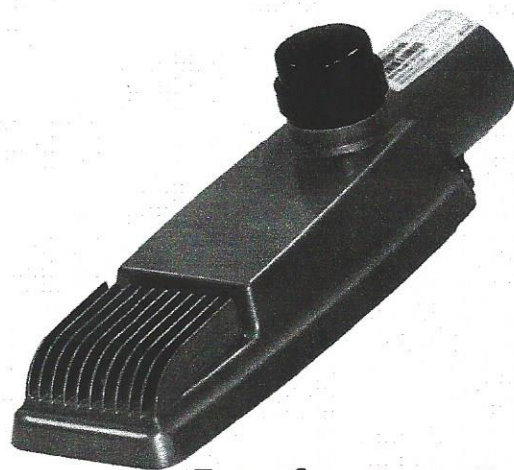
Model	LED Quantity	CCT	Distribution	Voltage	Color	Photocontrol	Dimming	Option 1	Option 2
CN	2	4 = 4100K	2 = Type II	1 = multi volt	S = Silver	C = Cap/None	X = None	X = None	X = None
	3	6 = 5700K	3 = Type III	90-285VAC/		N = NEMA	D = Dimming	H = House	
	4		5 = Type V	50-60Hz		Receptacle	(0-10vdc)	Side Shield	
	6			4 = 347V-480V * Only available for CN3 & CN6		R = NEMA Photocell 7 = 7 pin NEMA			

Accessories:

- House side shield
- NEMA 5 pin and 7 pin receptacle
- Knuckle mount



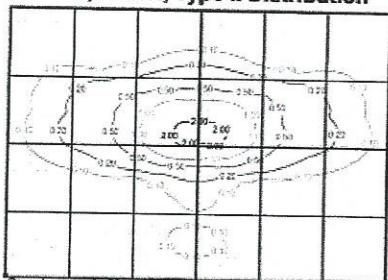
*CN4/CN6



Easy fast Installation!

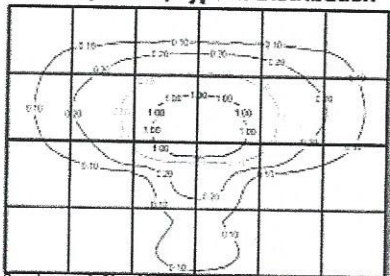
Photometrics:

CN3, 5700K, Type II Distribution



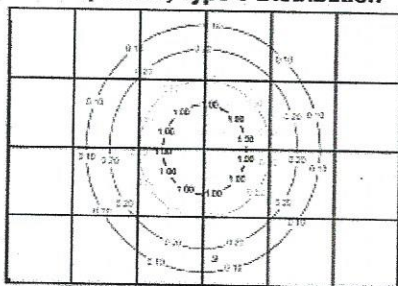
Sample area of 150 x 100 ft at 25 ft height.

CN3, 5700K, Type III Distribution



Sample area of 150 x 100 ft at 25 ft height.

CN3, 5700K, Type V Distribution



Sample area of 150 x 100 ft at 25 ft height.

Performance Summary:

Model	Drive Current (mA)	Input Watts	Input Current (A)			Distribution Type	4100K and 5700K	
			120V	240V	277V		Lumens	Efficacy (LPW)
CN2	1050	27	0.23	0.11	0.1	II III IV	2430	90
CN3	1050	40	0.33	0.17	0.14	II III IV	3600	90
CN4	1050	55	0.46	0.23	0.2	II III IV	4950	90
CN6	1050	80	0.67	0.33	0.29	II III IV	7360	92

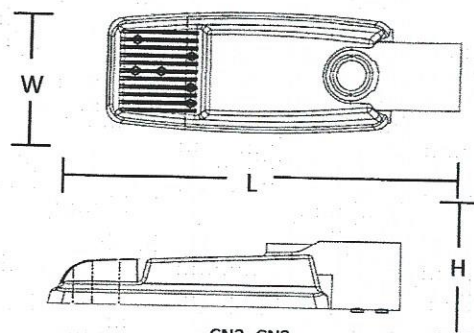
Mounting:

A slip fitter mount accepting horizontal arms up to 2.5" OD. An optional knuckle mount allows for the fixture to be oriented at angles from 0° to 45°. Installation and electrical connection is accomplished with easy access mounting bolts and integral cable loop with fully sealed Tyco Cool Splice Connectors.

Warranty:

5 year limited warranty with a 10 year option when required.

Weights/Dimensions:



CN2, CN3

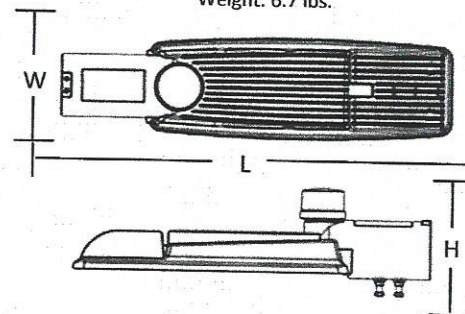
EPA: 0.6 sq. ft.

Length: 17 in. (43.18 cm)

Width: 3.41 in. (8.66 cm)

Height: 6.0 in. (15.24 cm)

Weight: 6.7 lbs.



CN4, CN6

EPA: 0.9 sq. ft.

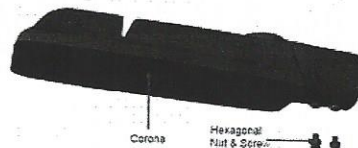
Length: 25.23 in. (64.08 cm)

Width: 6.49 in. (16.48 cm)

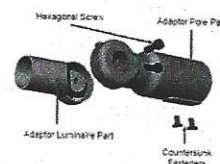
Height: 4.25 in. (10.8 cm)

Weight: 11.5 lbs.

*** All Specifications Are Subject To Change Without Notice ***



Knuckle Mount



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LED lighting facts
A Program of the U.S. DOE



Assembled in USA

ISO9001:2008

NOM